the theory that the sympathetic is the seat of the disease. Dr. Richardson has moreover entirely destroyed the functions of the brain by freezing the hemispheres in one of the inferior animals, but although by this method the most complete insensibility was induced there was no satisfactory indication of intermittent action of the heart. This was attributed at the time to incomplete freezing of parts at the base of the brain, but if in this condition the animal is made to inhale chloroform, the intermittent action is at once set up, the ganglionic centres being then involved. It would seem possible that irritation of the pneumogastric might produce intermittence, but experiment has showed that this is not the case.

Intermittence may exist without the knowledge of the person who is the subject of it, especially when the period of intermittency does not cover more than what would be one or at most two normal periods of cardiac contraction and there is a long interval before the return of it; but when the intermittency covers a period equal to five normal strokes, or when it is repeated at shorter intervals several times in the minute, then the patient is painfully, often fearfully, conscious of its presence.

The treatment recommended does not differ from that in general use.

The volume is illustrated by three plates. J. H. H.

ART. XXVI.—*Naval Hygiene.* By JOSEPH WILSON, Surgeon United States Navy: with an appendix. *Moving wounded men on shipboard.* By ALBERT C. GORGAS, Surgeon United States Navy. Reported to the Bureau of Medicine and Surgery. Published by order of the Navy Department. 8vo. pp. 233. Government Printing Office. Washington, 1870.

WITHOUT some knowledge of sanitary laws, the value or propriety of measures which, under equal conditions, medical men commonly recommend for the preservation of health cannot be appreciated. Even the little information of the kind needed for such appreciation is not general among those brave men who command our private and public ships. Through inattention to some circumstance, which to the uninstructed seems insignificant, captains of ships on long voyages "may destroy the health and consequently the efficiency of the ship's company." Official position gives them almost imperial authority. This rightly exercised may, in the opinion of Dr. Wilson, "have great influence in the preservation of human health." But it is very often exercised wrongly through ignorance, and sometimes wantonly through assumption of knowledge, coupled with an almost insurmountable reluctance to adopt any suggestion from a medical associate. These are all adults, very little accustomed to general or special reading, and mostly without that kind of youthful training which enables the full grown man in active life to derive instruction from books. For this class of persons more especially, our author has prepared his work, hoping, no doubt, that by imparting instruction to the superiors, the lowest subordinates in ships might have their chances of health and life increased, while laboring in insalubrious regions. With this object chiefly in view, he presents only such facts and opinions as are common to members of the medical profession. He abstains from the discussion of doctrines and theories, while he endeavours to inculcate in a popular manner such hygienic views as may be easily understood and made practically useful.

The volume cannot be regarded as a systematic treatise on naval hygiene. It is rather a popular essay, which may be freely recommended to those persons to whom it is more especially addressed. In form it is a medical narrative of a cruise of a steamship, which began in the summer of 1860, and closed in the autumn of 1861, through the West Indies, and as far south as Maranham and Surinam, in an unsuccessful pursuit of the notorious cruiser Sumter, Captain Semmes. The outline of the narrative is filled up by hygienic observations upon all the circumstances which influence the health of ships' companies, cruising in tropical regions, such as the internal condition of the ship as to cleanliness, ventilation, police, discipline, food, clothing, amusements, punishments, &c. &c. The subjects of quarantine, epidemic, endemic, typhus, typhoid and yellow fevers, scorbutus, &c., are treated in separate chapters in a very general way. The experience of the author during more than a quarter of a century in the navy, of which considerably more than half the time was at sea, is interwoven in his work. Besides his experience, Dr. Wilson brings to his self-imposed task, good sense, a habit of careful and close observation, with a natural love of truth and accuracy which renders his work, as far as it goes, valuable, because it is reliable.

The manner and style of the work may be perceived in the following extract from the chapter on "Endemics—malarial fevers."

"We have now pretty well determined the means of avoiding malarial miasm and its consequences; but human nature interposes obstacles. We see men going to nearly certain death: we reason, we explain, we argue; and a man who has never studied the subject suggests his 'I should think,' in opposition to us. The ignorant man's 'I should think' may carry the day against us, and our hygienic precautions go for nothing, except that we can sometimes use the privilege of saving ourselves. We see this in every city over the land; this ignorant 'I should think' controls legislation, and is slaying its myriads. We have the same difficulty in the military service. Expeditions are planned, topographical engineers are consulted about visible obstacles, but no reasonable calculations are made for the diseases which, even in campaigns of hard-fought battles, will destroy three times as many men as all the bullets. The medical man is not consulted till after the mischief is done, the men sick and dying. The surgeon, by his reports, then suggests that the force is being weakened, and may hint at the cause. The subject is discussed by those in authority, who knowing very little about the subject, their discussion is apt to end in something very like the old fashioned 'I should think.' I have always found the most effective way to manage this business, is to set up prejudices in the right direction, by discreet social conversation, and when this produces nothing better than 'I should think,' to follow it up by a report if necessary, the occasion for which may be explained, by stating the propriety of putting certain views formally on record before going into such risks as are contemplated. Such reports should state the case in good terse language, and conclude with a recommendation too pointed to be evaded. If this do not succeed, it is understood that a copy may go with comments to higher and higher authority, till we reach Congress; and the responsibility of a sweeping pestilence is in the right place as near as we can make it so. Sometimes our recommendations may involve alterations in the plans of a department, and then commanding officers feel that they must have such reports before they are safe in acting—even ask for them. The best illustration of the manner in which this has to be done, occurred in China some years ago. We were anchored in the Pearl River, above Canton, opposite Macao pass, and the captain, whom I had pretty well indoctrinated previously, on the subject of rice swamps, sunset boats, and night air, mentioned that he had orders to observe the tides in this part of the river, and hinted at the difficulty of finding a suitable place for a tide staff, the edge of a rice field appearing to be the only available place.

'We are healthy here; cannot we get a post or two down somewhere on a bar, at a distance from the shore?'

'The current is strong; it would be in the way; boats would run against it and tear it up.'

'Perhaps you might get observations enough in the daytime?'

'Hardly; we may not be here long, and the work should not be half done.'

'Leaving all risk of sickness out of the question, how would you arrange it?'

'Place a tide-gauge at the nearest point to the ship, with two men, and relieve them by other two at meal times.'

'A month of such observations would cost us about eight lives.'

'Oh, no.'

'Oh, yes; the first set, six men, down in one week, and others at the same rate; twenty-six in a month, one-third to die—eight and two-thirds; the calcu lation is a little strong, perhaps, so we will throw off the fraction—eight deaths a month.'

'Well; but we must do something.'

'Men must not spend a night in that swamp; they can pull up to the staff at the right moment, which surely can be anticipated, make their observations, and pull out into the river again, back to the ship if they have time.'

'The current is very strong; hard work, and no rest for the men.'

'Yes; but they had better spend the night, if need be, pulling against the current in the middle of the river, than lounging on shore.'

'Well; we will try it so.'

The plan was tried, and I soon heard that it only required fifteen to twenty minutes to pull ashore on slack water, make the observations and return. There was no difficulty about it. The observations were continued for several months; as long as there was any motive for continuing them, and the results are recorded in the history of the Japan expedition. This little conversation doubtlessly saved several lives, for without it the men would have been spending nights in the rice field before I should have heard anything about the tidal observations."

The contribution of Surgeon A. C. Gorgas to this volume, consists of a description of a cot, to the frame of which is fixed, a double inclined plane, to accommodate the lower extremities of the wounded man, with a strap around the chest, and thus prevent him from sliding down, in case the narrowness of the hatchway requires one end of the cot to be considerably depressed in order to make it descend. The description is illustrated by a diagram. The suggestion of Dr. Gorgas is ingenious and of practical value.

Dr. Wilson says, page 150: "When the wounded are merely to be taken below from the deck, the best arrangement is to have a stout man lift the wounded, by placing one arm back of the shoulders and the other under the knees. Holding him in this way he can carry him either up or down stairs, or a short distance anywhere, with as little jostling or injury as by any available contrivance. If a wounded man be too heavy to be carried in this way, he may be placed in an arm-chair and carried by two or three men. If too severely injured to be handled in a chair, he may be transported in a sick-bay cot, a cord of sufficient length being attached, if it be desired, to lower the cot to the berth-deck."

It is hoped that the publication of this volume by the Navy Department, will encourage members of the naval medical corps to endeavour to add something of scientific value to this department of medical literature. Heretofore the Bureau of Medicine and Surgery has been exclusively a fiscal office, little or no encouragement being given to scientific or professional enterprise.

W. S. W. R.

ART. XXVII.—*Twelfth Report of the Medical Officer of the Privy Council.* Appendix No. 7. *Report by* Dr. SEATON *on so-called "Animal Vaccination" in France, Belgium, and Holland.* London, 1870.

THIS interesting report is based on observations made in the autumn of 1869, during a visit to Paris, Brussels, Rotterdam, and Amsterdam, under official instructions from the Lords of the Privy Council, with the view of investigating the practice of animal vaccination in those cities, and of comparing the results there obtained by this kind of vaccination with the results attending the use of humanized vaccine lymph at the public vaccination stations in England.

With reference to the *transmissibility of cow-pox, unimpaired, from calf to calf,* the statements made to Dr. Seaton were conflicting. M. Lanoix said that since he first brought his calf from Naples in 1864 he had never failed to continue the disease by inoculation. It appears, however, that a certain amount of skill and practice is necessary to obtain a successful result, for M. Warlo-